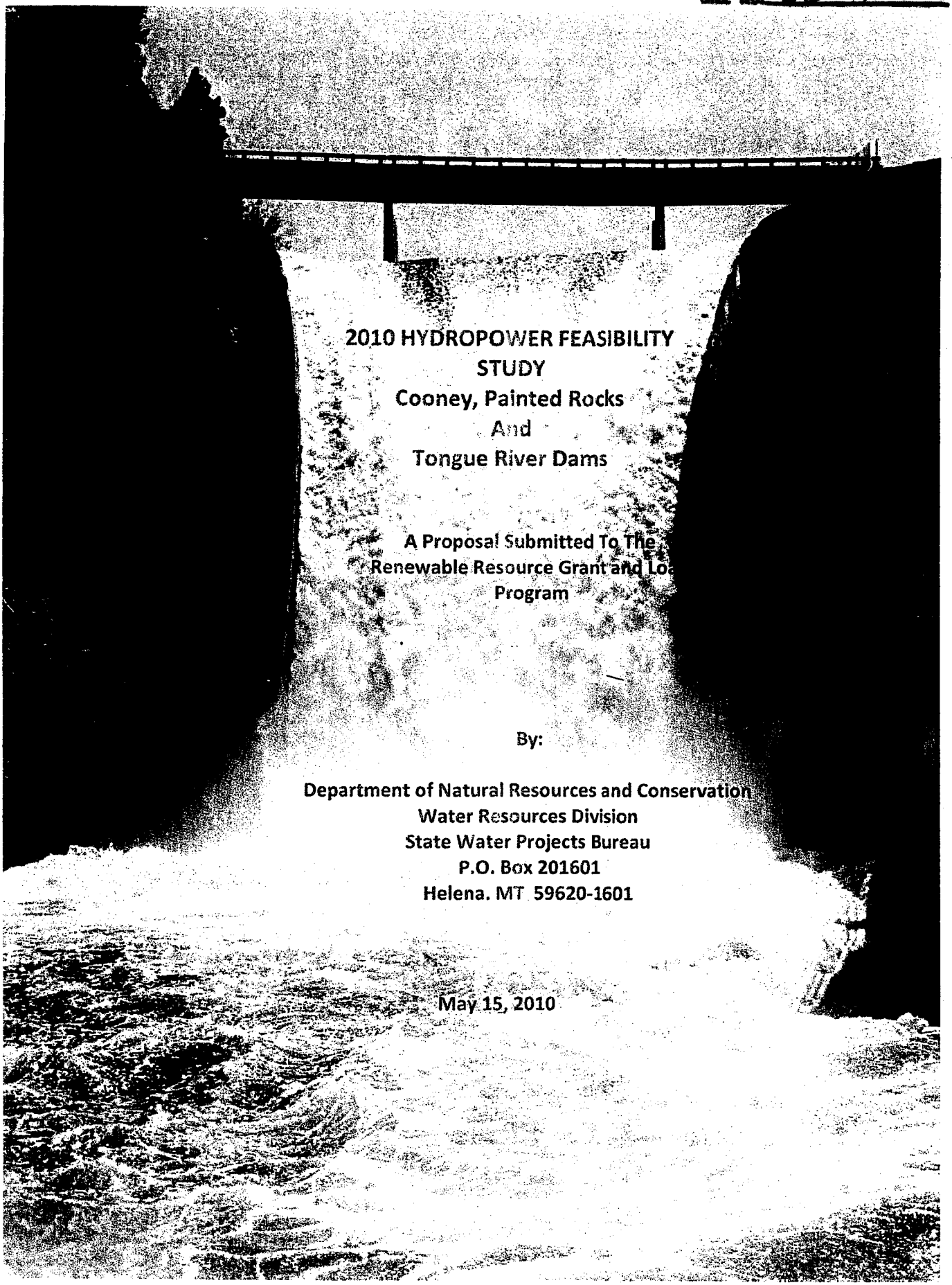

2010 HYDROPOWER FEASIBILITY STUDY

Cooney, Painted Rocks And Tongue River Dams

A Proposal Submitted To The Renewable Resource Grant and Lo Program

By:

Department of Natural Resources and Conservation
Water Resources Division
State Water Projects Bureau
P.O. Box 201601
Helena. MT 59620-1601

May 15, 2010

2010 HYDROPOWER FEASIBLITY STUDY
Cooney, Painted Rocks
and
Tongue River Dams

A Proposal Submitted To The
Renewable Resource Grant and Loan Program

By:

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P.O. BOX 201601
Helena, MT 59620-1602

May 15, 2010

Table of Contents

Application Summary

1. **Name of Applicant(s)** Department of Natural Resources and Conservation
   Water Resources Division
   State Water Projects Bureau

2. **Project Title** 2010 Hydropower Feasibility Study

3. **Federal Tax Identification Number** 81-0302402

4. **Type of Entity** State Agency
   (City, County, Tribal Government, District, Other)

5. **Type of Project** Reservoir/Dam
   (Irrigation, Municipal Water, Feasibility)

6. **Project Locations** Cooney Dam – 6 miles NW of Roberts, MT, Painted Rocks Dam – 29 miles SW of Darby, MT, Tongue River Dam – 30 miles NE of Sheridan, Wy

	Latitude	Longitude
Cooney	45.45	-109.20
Painted Rocks	45.71	-114.28
Tongue River	45.13	-106.76

7. **State Senate District** Cooney - 30, Tongue – 21, Painted Rks - 44
   State House District Cooney – 59, Tongue – 41, Painted Rks - 87

8. **Population Served by Project** Carbon Co. – 9,750, Ravilli Co. – 40,431, Bighorn Co. – 13,015.

9. **Number of Households Served by Project** _____
   (if applicable)

10. **Number of Farms or Ranches Served by Project** 573
    (if applicable)

11. **Number of Acres Served by Project** _____
    (if applicable)

12. **Counties- Carbon, Ravalli, Bighorn**

Proposed Funding Sources

Enter the source and amount of all possible funding for this project. Total the amount for each source. Even if you have not yet applied for the funds or have not yet received a commitment from the source, list the funds. The total amount of the proposed funding may be greater than the estimated total project cost indicated below.

Proposed Project Budget		
Funding Source (grant/loan or cash reserves)	**Amount**	**Committed/Uncommitted**
RRGL Grant	**$100,000.00**	Uncommited
DNRC In-Kind Services	**$ 11,600.00**	Committed
Water Storage Account	**$ 23,780.00**	Uncomitted
	$	
	$	
	$	
TOTAL	**$135,380.00**	

Note: Committed monies must have a written letter committing funds to the project.

Estimated Total Project Cost $ 135,380.00

AUTHORIZED REPRESENTATIVE:

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Project Coordinator
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BOND COUNSEL:

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(Name)

(Title)

(Street/PO Box)

(City/State/Zip)

(Telephone) (FAX)

(E-Mail address)

ACCOUNTANT:

NA
(Name of Accountant)

(Name of Firm)

(Street/PO Box)

(City/State/Zip)

(Telephone) (FAX)

(E-Mail address)

Authorizing Statement

An authorized agent representing the applicant must, by his/her signature, indicate that the application for funds and expenditure of matching funds, as represented, is officially authorized.

A. Grant Authorization

I hereby declare that the information included in and all attachments to this application are true, complete, and accurate to the best of my knowledge, and that the proposed project complies with all applicable state, local, and federal laws and regulations.

I further declare that, for the Department of Natural Resources and Conservation, Water Resources Division (Applicant Name), I am legally authorized to enter into a binding contract with the Department of Natural Resources and Conservation to obtain funding if this application is approved. I understand that all funds must be authorized by the Montana Legislature and that grant funds will become available only as Resource Indemnity Trust Fund interest is earned.

Department of Natural Resources and Conservation, Water Resources Division — 5/12/10
Applicant Name — Date

Authorized Representative (signature)

Administrator, Water Resources Division
Title

B. Loan Authorization

I hereby declare that the information included in and all attachments to this application are true, complete, and accurate to the best of my knowledge, and that the proposed project or activity complies with all applicable state, local, and federal laws and regulations.

I further declare that, for _____ (Applicant Name), I am legally authorized to enter into a binding contract with the Department of Natural Resources and Conservation to obtain loan financing if this application is approved. I understand that all funds must be authorized by the Montana Legislature, that loan funds will become available after the sale of state bonds, and that I will be expected to enter into a Bond Purchase Agreement when funding is available and according to my construction schedule.

_____ _____
Applicant Name — Date

_____
Authorized Representative (signature)

_____
Title

Proposal Abstract

Submitted to Department of Natural Resources and Conservation

Applicant Name DNRC, Water Resources Division

Project Title 2010 Hydropower Feasibility Study

Project Description:

Under Montana Annotated Code – Title 85, Chapter 1: "The department shall study the economic and environmental feasibility of constructing and operating a small-scale hydroelectric power generating facility on each of the water projects under its control and shall periodically update such studies as the cost of the electrical energy increases".

The State Water Projects Bureau (SWPB owns twenty-one water storage projects consisting of 24 dams throughout the state. At present, the Toston Dam (Broadwater-Missouri) is the only one that has hydroelectric facilities which generates renewable energy and economic benefits to the State of Montana and its residents. Ruby River, Cooney, Painted Rocks, and Tongue River are four state owned on-stream dams with potential to have hydropower generation facilities. Ruby River dam is presently being studied for hydropower generation as part of its on-going spillway and outlet works rehabilitation project. Cooney, Painted Rocks, and Tongue River are still in need of a Feasibility Study (FS) to determine if the generation of hydropower would be technically and economically feasible. The SWPB currently has preliminary permits awarded by the Federal Energy Regulatory Commission (FERC) to conduct due diligence on the Ruby River, Cooney, and Tongue River Projects.

This project would consist of contracting with a qualified consultant to perform Feasibility Studies on each of the three aforementioned dams. The studies would determine (1) If hydropower generation was technically feasible based on inflows, outflows, characteristics of each dam, access to the power grid, and construction possibilities, and (2) If hydropower generation at each facility would be economically feasible based on cost of construction, cost of operation and maintenance, amount of power generated, revenue created, cost of debt service, and the cost of tying into the present grid.

The results of the study would enable the SWPB to determine if hydropower generation is feasible at these dams and if so, prioritize future hydropower projects.

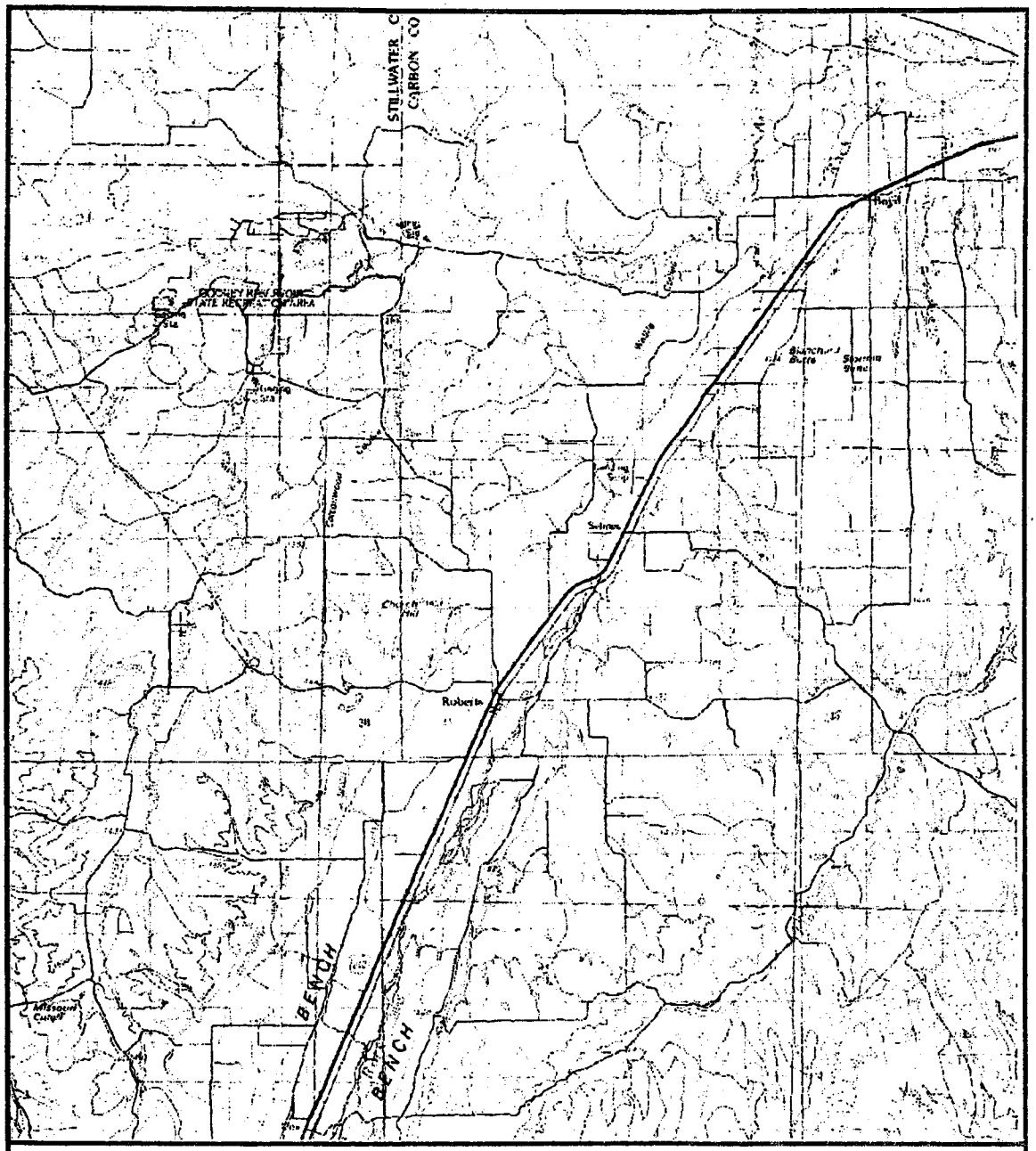

FIGURE 1
COONEY RESERVOIR
LOCATION MAP

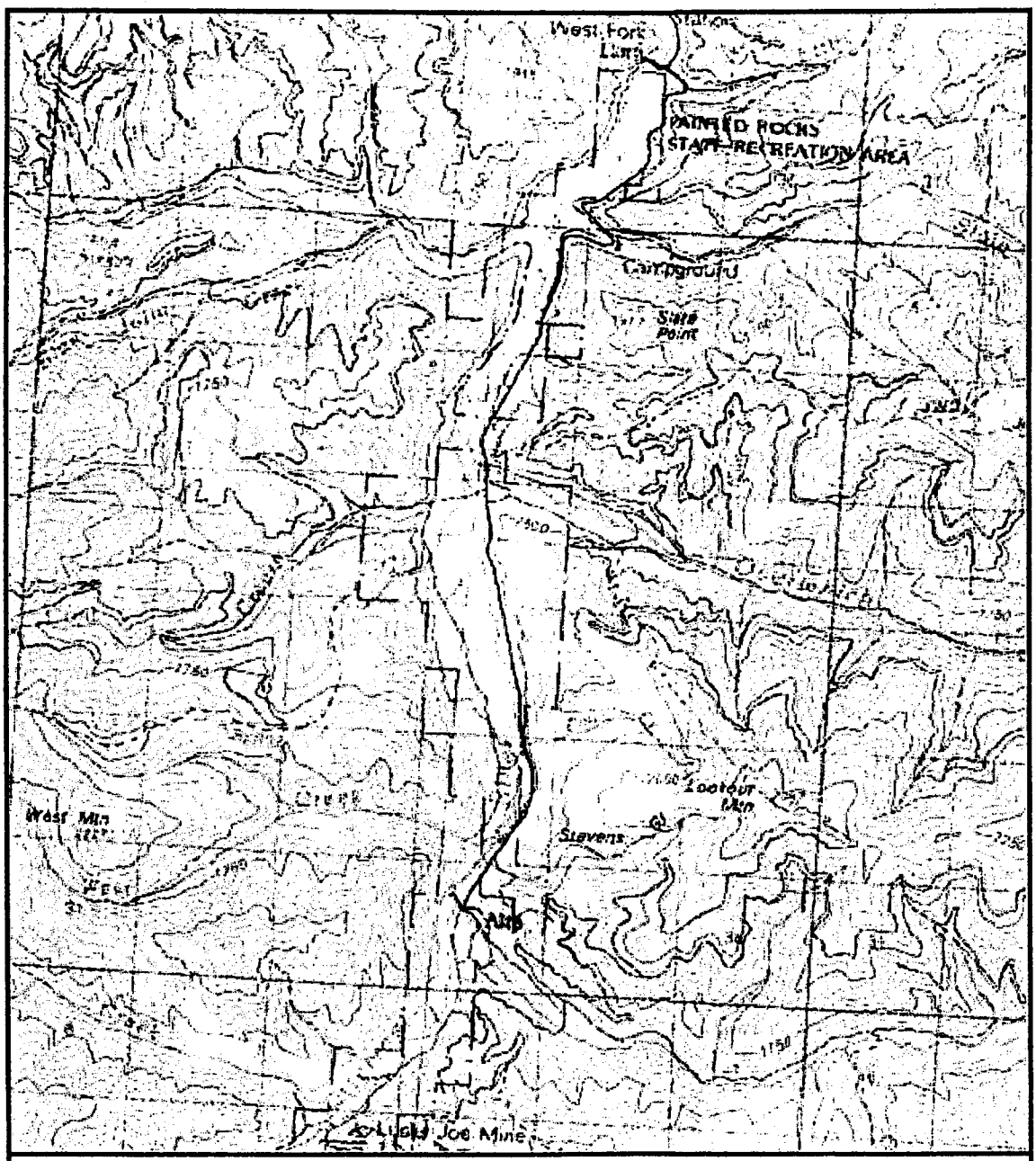

FIGURE 2
PAINTED ROCKS RESERVOIR
LOCATION MAP

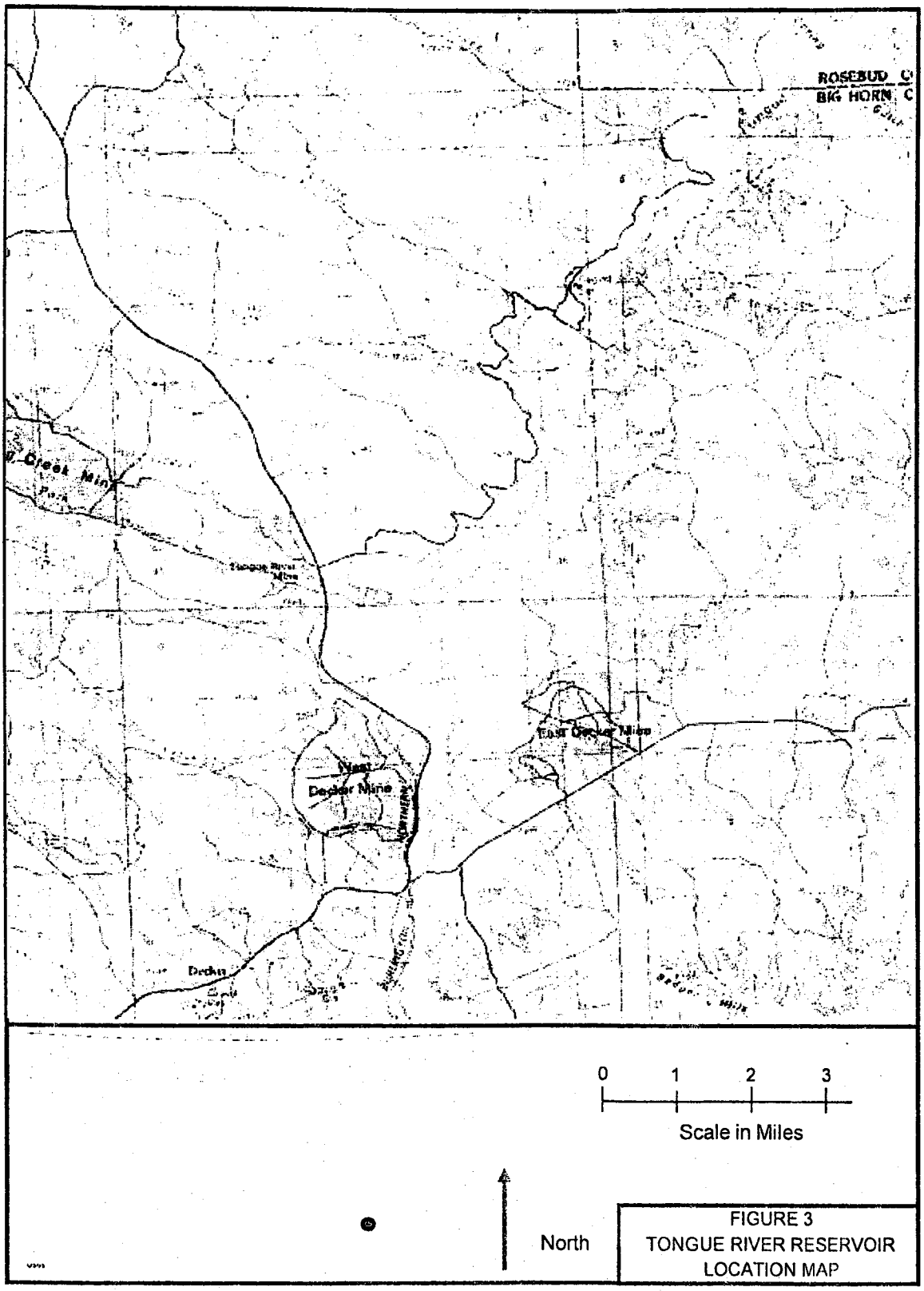

FIGURE 3
TONGUE RIVER RESERVOIR
LOCATION MAP

Resource and Citizen Benefits Narrative

Applicant Name DNRC, Water Resources Division

Project Title 2010 Hydropower Feasibility Study

Narrative Discussion:

Part 1: Conserve, Manage, Develop or Preserve Natural Resources

State owned dams have provided a means of storing, conserving and utilizing Montana's water resources for up to seven decades. The resulting benefits to Montanans are manifested in the continued sustainment of the agricultural economy of the area and the recreational use of the reservoirs. The reservoirs continue to be popular recreation areas, and have seen increasing use over the past decade by both local and non-local visitors. Consistent with the statutory goals of the Renewable Resources Grant and Loan Program, this proposed project will determine if three dams (Cooney, Painted Rocks, and Tongue River) could provide additional renewable resources in the way of hydropower which would provide renewable energy and a continued source of income to the state.

Resource Conservation:
The projects presently conserve our water resources. The projects have a combined active storage capacity of 138,917 acre feet. The FS will determine if these projects can also utilize the existing potential water energy that is currently wasted and convert it to clean renewable hydropower.

Resource Development:
This project would determine if hydroelectric power is feasible at three of the state owned dams. If hydropower is feasible, resource development could then be created through the construction of hydroelectric facilities. Prior studies have estimated that the three dams could provide up to 23,000,000 kilowatt hours of power per year. That production could be sold to provide funds to pay for the projects' development costs and fund additional resource development, such as rehabilitating state owned water infrastructure.

Resource Management:
The project would enhance the knowledge base of how these projects can be managed and potentially allow for future management of the present resource to provide additional benefits to the state and its citizens in the form of energy and money. It would allow for increased management of a resource for increased benefits.

Resource Preservation:
If the project determines that hydropower generation is feasible at the dams, than the future generation and storage (preservation) of power would be possible. The ability to create hydroelectric power at these dams would also put additional emphasis on preserving the dams in order to benefit from the additional resource. In addition the dams preserve the agricultural lifestyle of communities and the state through the irrigation water provided by the projects. The creation of energy could also benefit local users and thereby help preserve their way of life.

Multiple Uses:
The dams all have multiple uses which include farm irrigation (71,770 acre feet), water storage (138,917 acre feet), water-based recreation, enhancement of fisheries and wildlife habitat, and flood control efforts. Water based recreation includes boating, camping, swimming, and fishing. The three dams combined had over 30,000 fishing days in 2007. Multiple uses may include hydroelectric generation based on the results of this feasibility study.

New and Permanent Jobs:
The Feasibility Study itself will not create new and permanent jobs. The results of the FS will create new and permanent jobs if hydropower facilities are created due to the findings of the FS. The Broadwater-Missouri hydropower plant presently employs three full time staff, and uses additional part-time help throughout the year for various maintenance issues. The potential construction of hydropower facilities would create work for numerous construction contractors and provide demand for new services and goods at each of the dams.

Other Statutory Objectives of the RRGL Program

1. Economic Development/Helping Existing Businesses
This project will define if hydroelectric generation is economically feasible at three state owned dams. If power generation is possible and facilities constructed for that generation then both short term and long term economic benefits would be created.

The construction of hydropower facilities would employ numerous individuals and companies to perform the work. The demand for goods and services would be spread throughout the state and beyond. Building the facilities would involve construction contractors, turbine manufacturing companies, electricians, engineering consultants, concrete manufacturing facilities, and numerous other companies involved with providing materials for the construction. Area businesses would also be affected by extra demand for food, clothing, gas, motel/rental rooms, construction supplies, and various other needs of the work crews and companies. Ongoing operation and maintenance of the hydroelectric facilities would create demand for goods and services locally.

As previously stated, a baseline estimate completed in 1982 indicates that the dams could create 23,000,000 kilowatt hours per year of power. The estimated revenues from the sale of that power would be over $1,400,000 per year at today's wholesale rates.

In addition, the reservoirs provide irrigation water for area farms and ranches which provide beef and agricultural products to Montana and are one of the economic pillars of our state. By enhancing our ability to manage the dam, this project benefits the State of Montana and its citizens. Continuing to maintain the dams provide an economic benefit to the local water users, which in turn provides an economic benefit to local communities. The stored water is critical to the local and regional economy, which is heavily dependent on agricultural and agricultural related services and business. The continued use of the reservoir for agricultural purposes may create new and permanent service type jobs in the area.

The reservoirs also provide recreational opportunities for Montana citizens, providing excellent fishing, camping and wildlife viewing opportunities. This project will help stabilize the economic base of the communities in the surrounding area, potentially creating new and permanent service type jobs primarily related to the recreational opportunities provided by the reservoirs. An Economic Impact Report prepared by the Bureau of Business and Economic Research at the University of Montana in 2002 indicated that visitors to state parks and fishing access sites spend an average of $32 per group per day in the state. These expenditures are not just for permits but also for gas, grocery store purchases, gasoline purchases, motel rooms, and clothing/equipment purchases. Money spent by recreational users of our reservoirs impact a wide variety of businesses around Montana in a positive way and help maintain and increase employee payrolls.

Recreational users of the reservoir also buy fishing licenses, boat permits, and camping permits which go to the State's Department of Fish, Wildlife and Parks to help maintain and build the states outdoor recreational sites. The 30,000 fishing days on the reservoirs in 2007 do not include users of the facility such as boaters and campers.

2. Coordination with other actions

The FS would also be performed in coordination with the study presently being done on the Ruby River dam. Information derived from the Ruby River FS along with results from applications to the Federal Energy Regulatory Commission (FERC) for developing a hydropower facility at Ruby would be used in developing the FS for Cooney, Painted Rocks, and Tongue River.

3. Public Support

This project will determine the feasibility of developing hydropower facilities on three state owned dams which would increase the usefulness of each resource. Implementation of this project will accomplish several of the policy considerations as directed in MCA 85-1-101. Also, this project achieves one of the recommendations in the Montana Water Plan Section on Water Storage which is to improve the safety of existing dams and water delivery systems. Letters of public support are located in Appendix A. Letters will be forwarded to CARDD as they are received.

4. Regulatory Requirements

As previously stated, the SWPB is required by MCA to evaluated state owned projects for the potential to produce hydroelectric power. The projects listed for this grant proposal have the

most potential for developing hydropower facilities based on stream flows and dam configurations. If the state does not perform the studies, private entities could apply to FERC for development possibilities which could eliminate the state from deriving benefits from hydropower development. In fact, the SWPB recently had to file competing permits on the Ruby, Cooney, and Tongue projects with FERC to protect our interests from third parties. At this time, the SWPB has three years to conduct due diligence for hydro development on these projects.

Technical Narrative

Applicant Name DNRC, Water Resources Division

Project Title 2010 Hydropower Feasibility Study

Narrative Discussion:

Project Identification

The Department of Natural Resources and Conservation (DNRC) Water Resources Division is obligated by Montana Annotated Code to evaluate state owned water projects for potential hydropower generation. One state own dam presently has hydropower which provides energy and money to the state. At least four other state owned dams have a potential for hydropower generation. One of those dams (Ruby River) is presently being studied for hydropower generation as part of a spillway and outlet works rehabilitation project. The other three dams, Cooney, Painted Rocks, and Tongue River still need a FS performed. This project would provide for the necessary Feasibility Studies and the potential for additional hydropower generation in the state of Montana.

Project History

The dams are all state owned earthen dams that were built in the 1930's and 1940's. Cooney dam is located on Rock Creek which comes out of the Beartooth Mountains in southern Montana. Painted Rocks dam is located on the West Fork of the Bitterroot River in the Bitterroot Mountains of western Montana. Tongue River dam is located on the Tongue River which drains the Tongue River Basin in eastern Montana.

In the early 1980's the SWPB contracted with Tudor Engineering out of San Francisco, California to perform a Reconnaissance Study on Potential Hydroelectric Projects for the Nevada Creek, Ruby Dam, Middle Creek, Cooney Dam, Tongue River and Deadman's Basin. Tudor also completed a Feasibility Update Report for Broadwater, Cooney, Painted Rocks, and Deadman's Basin in 1984. The reports indicated that at that time, Ruby, Cooney, Tongue River, and Painted Rocks all had potential to be viable hydroelectric producers under the existing conditions. Deadman's Basin was considered viable but marginal. Nevada Creek and Middle Creek were not considered viable.

Broadwater was the most feasible based on its location in the Missouri River. Broadwater has been developed by the SWPB and produces continuous power and funding for the state. Tongue River hydro power feasibility was reviewed again in the 1990's as part of the dam's rehabilitation. At that time, based on power rates, it was not considered feasible. At present, with increasing interest to develop hydropower facilities, the volatility of electric rates and numerous markets to sell the power, Tongue River may again be a viable hydroelectric producer. Portions of the Tudor Studies are located in Appendix B.

Based on present MCA (85.1.105), the SWPB is obligated to evaluate potential hydropower generation on its water projects. FERC Preliminary Permits to develop hydropower on Ruby River, Cooney, and Tongue River were applied for by a private company in 2009. In response, the SWPB applied for and received the Preliminary Permits on those projects based on preference status as being the projects owner. The SWPB presently has Preliminary Permits with FERC to develop Ruby River, Cooney, and Tongue River for potential hydropower. The permits give the state three years to study the projects and continue the process of developing hydropower facilities. The process includes performing Feasibility Studies, Environmental Assessments, Environmental Impact Studies and possible exemption permits.

For Ruby River a conduit exemption will be applied for while the Ruby FS is being completed as part of the dam's spillway and outlet works rehabilitation.

For Cooney, Painted Rocks, and Tongue River, the Feasibility Study will be performed and further work will be done based on the results. If after three years, the SWPB has not proceeded with work on these projects, other entities can apply for Preliminary Permits and the state would loss the right to develop hydropower on these dams.

Goals and Objectives

Goal of this project is to perform a Feasibility Study on three dams to determine if there is potential to develop hydropower facilities at them and to determine basic designs if so. Project work will provide the following:

A. Information to determine if hydropower development is feasible
B. Work that is necessary by state statute
C. Work that is necessary to fulfill FERC requirements in order to continue future development

Project Objectives include:

1. Complete a Request for Proposals (RFP) to perform an FS for hydropower on three dams.
2. Contract a consultant to perform the FS based on the results of the RFP
3. Use the results of the FS and the results of FERC exemption status applications at Ruby River to proceed with or not proceed with hydropower development at Cooney, Painted Rocks, and Tongue River dams.

Technical Alternatives

The Department has looked at a number of alternatives for this project. This section will review the alternatives.

Preferred Alternative

The preferred alternative involves:

1. Hiring a consulting firm to perform a Feasibility Study to determine if developing hydropower at Cooney, Painted Rocks, and Tongue River dams is both technically and economically feasible. Where feasible the FS would develop preliminary hydropower facility designs.

This alternative would also use information that is being derived from the Ruby River FS, and results of FERC rulings at Ruby River as aids in developing the FS.
The FS would be staged in the following manner.

Stage 1 - Analyze stream inflow and outflow data along with dam configuration and potential design alternatives to determine if hydropower development at each dam is technically feasible. If technically feasible, then each dam will proceed to Stage 2 studies. If a dam is determined not technically feasible, then that dam will be dropped from further study. Power transmission would also be analyzed as part of the technical feasibility. The technical feasibility section would also determine the most probable basic design for the each facility.

Stage 2 – Anaylze economic feasibility. This step will include determining the potential power production from each dam and the expected revenues from that production. The revenues would be compared to construction costs, debt service, and operation and maintenance costs along with expected project life to determine if the revenues received would be worth the investment. If both technical and economic feasibility are determined than the dams would proceed to Stage 3.

Stage 3 – Develop a preliminary design report detailing facility construction, detailed costs for construction, and construction time lines. While much of the information in Stage 3 will have been developed in the first stages, Stage 3 information will be more detailed and used to continue the projects beyond the FS stage.

Other Alternatives

The state also reviewed other alternatives as listed below:

No Action Alternative

The no action alternative would involve the state doing nothing in regards to hydropower development. This alternative would cost nothing, and would not provide any information about hydropower development. Since the SWPB is mandated my

state statute (MCA 85.1.501) to study possible hydropower development on state owned water projects, this alternative is not viable.

Partial FS Alternative

In this alternative, only a portion of the FS would be performed to determine if hydropower at the dams was technically feasible. The economic feasibility and design could be done at a later date. This alternative would initially cost less and the full expenditures for a complete FS could be spread out over time. In the long run, breaking down the FS into separate projects would cost the state more money. It would involve redundant development of RFPs, bid packages, bid reviews, contract development, and project oversight. It would potentially spread out the time frame to complete the entire FS beyond the 3 years that the SWPB presently has based on FERC regulations. As such, this alternative was not considered preferable.

SWPB Staff FS Alternative

In this alternative, the SWPB staff would perform the Feasibility Study rather than contract it out. SWPB personnel have enough experience and knowledge to review the projects, determine the technical and economic feasibility, and perform a design but the staff do not have the additional time to perform an FS without negatively impacting the tasks they presently perform. In addition, there are aspects of the FS that would require research by SWPB staff that a consultant experienced with hydropower Feasibility Studies would already know. Also, funding for the study is not presently available in the SWPB budget.

Project Implementation and Schedule

The FS needs to be performed under a tight schedule in order for the SWPB to have time to review the results and proceed as needed before the 3 year time limit is up on the Preliminary Permits from FERC. The implementation schedule is as follows:

1. Develop RFP and bid packages for the project. SWPB engineers would put the RFP and bid packages together for this task during the summer of 2011. Advertising and bidding would occur during August 2011.

2. Contract with a consultant to perform the FS. This task would be performed by SWPB staff by September 2011.

3. Perform the Feasibility Study on the three dams. The consultant would complete a first draft by January 30, 2012 and a final by March 30, 2012.

3. Quarterly reporting would be completed by SWPB staff throughout the project and a final project completion report would be completed by June 2012.

4. Project management would be performed throughout the project by the project engineer.

Supporting Technical Documentation

Cooney Dam

Regional Geology: The area of the Cooney Reservoir is dominated by the sedimentary Fort Union Formation of Paleocene time (approximately 65 million years ago). Sediment for the Fort Union was derived from erosion of the uplifted Beartooth Mountains. Uplift of the Beartooths occurred during the Laramide Orogeny which was part of forming the Rocky Mountains. The area also has a series of northeast trending synclines and anticlines. Drainages are dominated by recent alluvial deposits while slopes have various levels of alluvial terrace deposits.

Site Geology: The geology of the site is dominated by two members of the Fort Union Formation. The majority of the reservoir is underlain by the Tongue River member of the Fort Union is a sandstone with interbedded shale, siltstone and coal beds. Underlying the Tongue River member is the Lebo member of the Fort Union. The Lebo consists of shale with interbedded sandstone and siltstone.

Soils: The landforms in the area are dominated by rolling hills, steep hills, and rock outcrops, with moderate to steep grades. Soils in the vicinity of the dam consist of clay loams (Wayden-Cabba) on hilly terrain, (Absarokee) on moderate to flat slopes, channery loam (Rentsac Channery) on steeper slopes and rock complexes (Rentsac-Rock) on steep slopes and in outcrop areas.

Climatology: The area averages about 24 inches of precipitation per year with March, April and May having the highest amounts of precipitation. Temperatures on average range from 20 degrees Fahrenheit in January to 70 degrees Fahrenheit in July.

Vegetation: Agricultural land, pasture grassland and floodplain vegetation are commonly found in the area. The shoreline of the reservoir and adjacent land supports good native grass and shrubland. Livestock grazing is common in the area.

Painted Rocks

Regional Geology: Painted Rocks is located in the Bitterroot Mountains which were formed during the late Cretaceous to Tertiary aged intrusion of the Idaho Batholith into Proterozoic aged metasedimentary rocks. Tertiary aged volcanics also accompanied the intrusive event.

Site Geology: The reservoir itself is surrounded by Tertiary aged intrusive rock consisting of variable phases of granite, Tertiary aged hypabyssal intrusives and flows and flows consisting mainly of quartz latite porphyry, Tertiary aged volcanic of consisting of rhyolitic to quartz latitic flows and tuff, and proterozoic aged metamorphic consisting mainly of quartzite. The drainage basin consists of Quarternary aged alluvial deposits of clay, silt, sand and gravel.

Soils: Soils around the dam are predominated by the Kadygulch-Totelake-Sharrott complex which is found on very boulder mountain slopes. The complex is composed of gravelly, sandy loams to very gravelly sandy loams.

Climatology: The Darby area has average temperatures ranging from the teens in the winter to the low 80's in the summer. Average precipitation is about 16 inches per year with 3 feet of snow.

Vegetation: Due to the mountainous terrain and steep slopes around the reservoir, vegetation is dominated by conifers of pine, hemlock, and fir with minor grasses and shrubs.

Tongue River

Regional Geology: The regional geology is characterized by Tertiary aged flat lying sedimentary beds that were laid down in near coastal environments that previously had been shallow marine prior to uplift.

Site Geology: The geology at Tongue River reservoir is comprised of the Tertiary aged Wasatch formation (siltstone and sandstone with associated shale and clinker) which is underlain by the Tongue River Member of the Fort Union Formation (sandstone and siltstone with mudstone and clay and clinker). Both units also have coal beds. The clinker found in both formations is a result of burning coal beds which baked the sedimentary units. Locally the clinker has collapsed in voids formed from the burned coal beds. Northeast to southwest trending faults have also been mapped with offsets up to 300 feet.

Soils: Soils around the dam are dominated by the Wibeaux-Spearman complex consisting of loam, clay loam, and channery loam on 8-15 percent slopes. Haverson and Glenderg soils consisting of fine sandy loam to loamy fine sand to silt loam on flater slopes.

Climatology: The Tongue River area has average lows temperatures in the winter in the single digits to below zero to average highs in the summer in the upper 80s. Average annual precipitation is about 12 inches with 18 inches of snow fall.

Vegetation: Agricultural land, pasture grassland and floodplain vegetation are commonly found in the area. The shoreline of the reservoir and adjacent land supports good native grass and shrubland. Livestock grazing is common in the area.

Cooney, Painted Rocks, and Tongue River

Potential Hydroelectric Projects Studies: A Reconnaissance Study for hydroelectric potential was performed on six state owned dams in 1982. Another Feasibility Update Report was 1984. The studies concluded that at that time, the construction of hydroelectric facilities was feasible at Broadwater-Missouri, Cooney, Deadman's Basin, Painted Rocks, Ruby River, and Tongue River. Portions of those reports are in Appendix B. Due to changing regulations, technology, and economic climate, the findings from those studies are no longer valid and new studies need to be conducted.

Project Management Narrative

Applicant Name DNRC, Water Resources Division

Project Title 2010 Hydropower Feasibility Study

Narrative Discussion:

The State Water Projects Bureau (SWPB) of the Montana Department of Natural Resources and Conservation will provide project management of this grant. The SWPB employs licensed professional engineers (PE), instrumentation specialists and project and environmental coordinators. Randy Laskowski will coordinate all efforts and submit all bills to the Resources Development Bureau of DNRC. Other staff within the SWPB will provide support and assistance to the project.

The project RFP and bid documents will be developed by the SWPB project engineer. Contracting will be performed by SWPB staff. RFP and bid documents will be completed during the summer of 2011. SWPB will put the project out to bid in the late summer of 2011 with contracting being completed by September 2011. The FS will be conducted during the fall of 2011 and the draft FS will be completed by January 30, 2012. The Final FS will be due by March 30, 2012. The project engineer will perform oversight on all aspects of the project. The project engineer for this project will be Walt Anderson who is the SWPB's Hydropower Engineer and who has considerable experience with the Broadwater-Missouri Hydroelectric Power Plant, and is presently working with FERC on Permit Applications and Conduit Exemptions.

Contact with the Water User Associations will also be maintained throughout the project.

Project documentation will be performed by the grants coordinator with quarterly reports throughout the project and a project completion report being completed by June 2012.

Financial Presentation

Financial Feasibility Narrative

Applicant Name DNRC, Water Resources Division

Project Title 2010 Hydropower Feasibility Study

Narrative Discussion:

Project Budget

Project costs were estimated using a cost estimate from a private consultant and from SWPB experience doing project development and oversight on these types of projects.

The SWPB has contracted with URS of Denver, Colorado to do the Final Design for the Ruby Rehabilitation Project. As part of that project, a Feasibility and Design are scheduled for hydroelectric facilities. URS will perform power studies, define power plant size, prepare a preliminary design, prepare a cost estimate for construction, evaluate power transmission and prepare a Preliminary Design Report. The cost for this work is estimated at $41,260.00. URS personnel have indicated that their estimate for the Ruby project would be in-line with doing each of the three Feasibility Studies in this grant proposal. As such, the Ruby estimate was multiplied by three to come up with a price of $123,780.00 for the studies. In additional to the cost of the FS preparation, Water Project Bureau in-kind services would total $11,600.00 for a project total of $135,380.00.

If the project requires additional Department effort above that described in the application, the extra cost will be absorbed from the Department's operating budget.

Funding Structure

The total project budget is estimated to cost approximately $ 135,380.00. A summary of the proposed funding sources and amounts includes the following:

$100,000.00	Grant Funding
$ 23,780.00	Water Storage Account
$ 11,600.00	The Department will provide in-kind services.
$135,380.00	

Total Project Budget: $135,380.00

RFP plan preparation, bid packages and contracting would be completed in the summer of 2011 while the studies would be conducted in the fall and early winter of 2011. A draft FS would be completed by January 30, 2012 and Finalized by March 30, 2012.

State Water Project personnel will provide in-kind services for developing RFP and bid packages, administration of contracts, FS review and general project coordination. A cost breakdown is shown in Table 1. The budget is summarized in the Budget Form for Renewable Resource Projects. The in-kind services and WUA loan are estimated at 25% of the projected total budget.

Table 1 - Hydropower Feasibility Study Cost Estimate

DNRC In-Kind Services

RFP and Bid Packages	40 hrs @ $35/hr =	$ 1,400.00		
Contracting	20 hrs @ $35/hr =	$ 700.00		
Reporting	40 hrs @ $35/hr =	$ 1,400.00		
Printing (bid packages)		$ 200.00		
Advertising		$ 350.00		
Project Management	80 hrs @$35/hr =	$ 2,800.00		
Site Visits (up to 10)	100 hrs @$35/hr	$ 3,500.00		
Vehicle Usage	10 days + mileage	$ 600.00		
Per Diem	10 days @ $23/day	$ 230.00		
Lodging	6 days @ $70/day	$ 420.00		
		$ 11,600.00	$	11,600.00

Consultant Feasibility Study Estimate

FS for Ruby River Dam		$ 41,260.00		
Includes:	Power Studies			
	Define Power Plant Size			
	Prepare Preliminary Design			
	Construction Cost Estimate			
	Evaluate Power Transmission	x3 dams		
		$ 123,780.00	$	123,780.00
			$	135,380.00

Applicant Name DNRC, Water Resources Division Budget Forms For Renewable Resource Projects

1. Contract Administration

Date May 2008

Category	DNRC Grant	DNRC Loan	Project Sponsor	DNRC-WRD-SWPB In-Kind Services	Other _____ (Specify)	Total
RFPs				$1,400.00		$1,400.00
Contracting				$700.00		$700.00
Reporting				$1,400.00		$1,400.00
Subtotal				$3,500.00		$3,500.00
Printing				$200.00		$200.00
Advertising				$350.00		$350.00
Subtotal				$550.00		550.00
Total Administration				$4,050.00		$4,050.00

Applicant Name DNRC, Water Resources Division Budget Forms For Renewable Resource Projects

2. Professional and Technical Costs

Date May 2008

Category	DNRC Grant	DNRC Loan	Water Storage Account	In-Kind Services	Other (Specify)	Total
Project Management				$2,800.00		$2,800.00
Site Visits				$3,500.00		$3,500.00
Engineering	$100,000.00		$23,780.00			$123,780.00
Subtotal Professional	$100,000.00		$23,780.00	$6,300.00		$130,000.00
Vehicles				$600.00		$600.00
Lodging				$420.00		$420.00
Per Diem				$230.00		$230.00
Subtotal Technical				$1,250.00		$1,250.00
Total Professional & Technical	$100,000.00		$23,780.00	$7,550.00		$131,330.00

Applicant Name DNRC, Water Resources Division Budget Forms For Renewable Resource Projects

3. Construction Costs Date May 2008

Category	DNRC Grant	WUA Loan	Project Sponsor	DNRC-WRD-SWPB In-Kind Services	Other _____ (Specify)	Total
Total Construction						

4. Total Costs

A. Total Administration				$4,050.00.00		$4,050.00
B. Total Professional & Technical	$100,000.00		$23,780.00	$7,550.00		$131,330.00
C. Total Construction						
Total Project Cost	$100,000.00		$23,700.00	$11,600.00		$135,380.00

APPLICANT AFFORDABILITY DATA

Complete the following section only if your entity generates revenue through user fees or assessments.

For Sewer or Water Projects:

	Current	Projected
Number of residential users served by system	_____	_____
Average monthly residential water rate	_____	_____
Average monthly residential sewer rate	_____	_____
Type of billing system used (flat fee or metered)	_____	_____

For Irrigation Projects:

	Current	Projected
Number of irrigated acres served by system	_____	_____
Annual assessment per acre	_____	_____

or

Number of acre-feet of water sold annually
Cooney – 21,770, Painted Rocks – 10,000, Tongue River – 40,000
Total = 71,770

Cost of water per acre-foot
Cooney - $2.00/share for O&M, Painted Rocks – $1.50/share for O&M, Tongue River - $0.80/share for O&M.

Environmental Narrative

Applicant Name DNRC

Project Title 2010 Hydropower Feasibility Study

Narrative Discussion:

Environmental Evaluation

The project as proposed will not have any significant impacts. The Feasibility Study will have no environmental impacts. Field work associated with the study would entail site visits to view the reservoirs, dams, site structures, inflows, outflows, and surrounding lands. No construction would be performed and no earthmoving actions taken. There would be no impacts to air, soil, or water during this project.

Permits Needed:

No permits would be required to perform the Feasibility Study.

ENVIRONMENTAL CHECKLIST

***Key Letter: N** – No Impact/Not Applicable **B** – Potentially Beneficial **A** – Potentially Adverse*
***P** – Approval/Permits Required **M** – Mitigation Required*

PHYSICAL ENVIRONMENT	
Key _____ ***N*** _____	***1. Soil Suitability, Topographic and/or Geologic Constraints (e.g., soil lump, steep slopes, subsidence, seismic activity)*** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key _____ ***N*** _____	***2. Hazardous Facilities (e.g., power lines, hazardous waste sites, acceptable distance from explosive and flammable hazards including chemical/petrochemical storage tanks, underground fuel storage tanks, and related facilities such as natural gas storage facilities & propane storage tanks)*** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key _____ ***N*** _____	***3. Effects of Project on Surrounding Air Quality or Any Kind of Effects of Existing Air Quality on Project (e.g., dust, odors, emissions)*** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key _____ ***N*** _____	***4. Groundwater Resources & Aquifers (e.g., quantity, quality, distribution, depth to groundwater, sole source aquifers)*** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key _____ ***N*** _____	***5. Surface Water/Water Quality, Quantity & Distribution (e.g., streams, lakes, storm runoff, irrigation systems, canals)*** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key _____ ***N*** _____	***6. Floodplains & Floodplain Management (Identify any floodplains within one mile of the boundary of the project.)*** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau

ENVIRONMENTAL CHECKLIST

Key Letter: **N** – No Impact/Not Applicable **B** – Potentially Beneficial **A** – Potentially Adverse
P – Approval/Permits Required **M** – Mitigation Required

Key N	7. **Wetlands Protection (Identify any wetlands within one mile of the boundary of the project.)** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key N	8. **Agricultural Lands, Production, & Farmland Protection (e.g., grazing, forestry, cropland, prime or unique agricultural lands) (Identify any prime or important farm ground or forest lands within one mile of the boundary of the project.)** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key N	9. **Vegetation & Wildlife Species & Habitats, Including Fish (e.g., terrestrial, avian and aquatic life and habitats)** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key N	10. **Unique, Endangered, Fragile, or Limited Environmental Resources, Including Endangered Species (e.g., plants, fish or wildlife)** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key N	11. **Unique Natural Features (e.g., geologic features)** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key N	12. **Access to, and Quality of, Recreational & Wilderness Activities, Public Lands and Waterways, and Public Open Space** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau

Key Letter: **N** – No Impact/Not Applicable **B** – Potentially Beneficial **A** – Potentially Adverse
P – Approval/Permits Required **M** – Mitigation Required

HUMAN POPULATION	
Key N	1. **Visual Quality – Coherence, Diversity, Compatibility of Use and Scale, Aesthetics** *Comments and Source of Information*: No impacts are anticipated – Source - State Water Projects Bureau
Key N	2. **Nuisances (e.g. glare, fumes)** *Comments and Source of Information*: No impacts are anticipated – Source - State Water Projects Bureau
Key N	3. **Noise – Suitable Separation Between Housing & Other Noise Sensitive Activities and Major Noise Sources (aircraft, highways & railroads.)** *Comments and Source of Information*: No impacts are anticipated – Source - State Water Projects Bureau
Key N	4. **Historic Properties, Cultural, and Archaeological Resources** *Comments and Source of Information*: No impacts are anticipated to any historic, cultural or archaeological resources. Source – State Water Projects Bureau
Key N	5. **Changes in Demographic (Population) Characteristics (e.g., quantity, distribution, density)** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key N	6. **General Housing Conditions - Quality, Quantity, Affordability** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau
Key N	7. **Displacement or Relocation of Businesses or Residents** *Comments and Source of Information*: No impacts are anticipated. Source – State Water Projects Bureau